

REMARKS

I. GENERAL

Claims 1-51 are currently pending in this application; claims 15-19, 24 and 36-39 are withdrawn from consideration; claims 1, 21-23, and 42-44 have been amended. The issues in the Current Action are as follows:

- Claims 15-19, 24 and 36-39 are objected to because of informalities; and
- Claims 1-14, 20-23, 25-35, and 40-51 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter.

In response, Applicant hereby traverses the rejections and requests reconsideration and withdrawal in light of the remarks contained herein.

II. EXAMINER INTERVIEW SUMMARY

On July 14, 2010, an in-person discussion was held between the Examiners, Krystine Breier and Jack Keith, and Applicant's representative, Huyen Luong (Registration No. 61,052). Applicant would like to express appreciation to the Examiners for their time and consideration in conducting the interview. Applicant respectfully submits this summary of the substance of the interview in accordance with M.P.E.P. 713.04.

During the interview, Applicant's representative presented reasons that the pending claims are directed toward statutory subject matter. Specifically, Applicant asserted that independent claim 1, prior to the present amendment, satisfies the machine or transformation test, and, in addition, it is not directed to an abstract idea. No agreement was reached regarding this issue. Nevertheless, the Examiners agreed that a recital of an output such as an image would be sufficient to overcome the 35 USC 101 rejection.

III. CLAIM AMENDMENTS

Claim 1 has been amended to recite at least "the output of said processing used to represent the seismic traces in one or more images of at least a portion of the geological

interfaces of said subsurface zone,” to correct typographical errors, and to better clarify the claim. Support can be found in the specification at, *e.g.*, paragraphs [0003]-[0011] of corresponding U.S. Publication No. 2006/0291330. Further, claims 21 and 42-44 have also been amended to correct typographical errors. As such, no new matter has been added.

IV. CLAIM OBJECTIONS

Claims 15-19, 24 and 36-39 are objected to because they are labeled “withdrawn” but none of the text of the claims is present. The Claims section of this Response includes the language of claims 15-19, 24, and 36-39, thereby obviating the objection.

V. REJECTIONS UNDER 35 U.S.C. § 101

Claims 1-14, 20-23, 25-35, and 40-51 are rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. Applicant respectfully traverses the rejection by explaining below that the claims are, indeed, directed toward at least one class of patent-eligible subject matter.

Claims 1-14, 20-23, 25-35, and 40-51 are directed to a “method” and therefore are considered process claims for the purposes of 35 U.S.C. 101. The sole basis for the Office Action’s contention that claims 1-14, 20-23, 25-35, and 40-51 are unpatentable under 35 U.S.C. 101 is that they allegedly fail to satisfy the machine-or-transformation test. *See* Current Action, pgs. 2-4. Although Applicant disagrees with the contention, to advance prosecution, Applicant has amended claim 1 to further clarify its patentability under 35 U.S.C. 101. Specifically, claim 1, as amended, recites in part “the output of said processing used to represent the seismic traces as one or more images of at least a portion of the geological interfaces of said subsurface zone.” Accordingly, the claims recite that the output of the method is used to produce one or more images of at least a portion of the geological interfaces of said subsurface zone. Thus, claim 1 at least meets the transformation test because the claim transforms a particular article, *e.g.*, the input seismic traces, to a different state or thing, *e.g.*, data that can be used to represent the seismic traces as one or more images of at least a portion of the geological interfaces of said subsurface zone.”

Under the “transformation” prong of the machine-or-transformation test, there is transformation with regard to electronic data when “the nature of the data has been changed such that it has a different function or is suitable for a different use” (emphasis added). *See* New Interim Examination Instructions For Evaluating Subject Matter Eligibility Under 35 U.S.C 101, August 24, 2009, pgs. 5-6. In this case, there is at least transformation of the input seismic data by the claims because the nature of the data has been changed such that it is now suitable for use to represent the seismic traces as one or more images of at least a portion of the geological interfaces of said subsurface zone where the raw seismic traces were not suitable for use to create one or more images.

It has been recognized that method claims concerning seismic data processing recite statutory processes, *e.g.*, do not claim an abstract idea. *See In re Johnson*, 589 F.2d 1070 (C.C.P.A. 1978). In *Johnson*, the court recognized that “the claim when analyzed in its entirety still defines a process for producing a segment of a seismic trace, which is free from a multiple noise event, from a segment of the trace which includes the multiple noise event [I]t is clear that the claim as a whole defines a sequence of steps for operating upon a seismic data trace to produce a different, noise-free seismic data trace. [W]e . . . conclude claim 1 recites a statutory process.” *Id.* at 1080. “Appellants do not assert a recitation of a formula or a method of calculation as a basis for patentability of the recited processes, and it is clear that any mathematical operations performed in practicing the processes are incidental to the recited series of steps whereby a seismic data record is analyzed and processed in a specific manner to produce and record a noiseless seismic data record.” *Id.* at 1081.

Specifically, the claim 1 mentioned by the quoted portion of *Johnson* is set forth below:

1. A process for suppressing multiple events in seismic traces comprising the steps of
 - a) comparing a first seismic trace segment with a second segment of the same trace to select that portion of the second segment which most closely resembles said first segment;
 - b) determining the degree of similarity between said selected portion and said first segment; and
 - c) extracting a part of said selected portion from said first portion, said part being a function of the degree of similarity between said selected portion and said first segment.

Id. at 1074.

Similar to *Johnson*, the pending claims do not assert a recitation of a formula or a method of calculation as a basis for patentability of the recited processes. Any mathematical operations performed in practicing the processes are incidental to the recited series of steps “whereby a seismic data record is analyzed and processed in a specific manner to produce and record a noiseless seismic data record.” *Id.* at 1081. Accordingly, claims 1-14, 20-23, 25-35, and 40-51 are patentable because they are not directed to a law of nature, physical phenomena, or an abstract idea. Therefore, Applicant respectfully requests withdrawal of the rejection of record.

VI. CONCLUSION

In view of the above, Applicant believes the pending application is in condition for allowance. Applicant submits a fee in the amount of \$1100 for a petition for extension of time (three months). Please charge any additional fees required or credit any overpayment to our Deposit Account No. 06-2375, under Order No. HO-CGGV.P0006.US/11006816, pursuant to 37 CFR 1.16 through 1.21, inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees, from which the undersigned is authorized to draw.

Dated: August 18, 2010

Respectfully submitted,

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